Cancer In Massachusetts Women
1989 – 1998
Data Report

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INTRODUCTION

"Cancer in Massachusetts Women" is a report from the Massachusetts Department of Public Health that provides data on common cancers in women in the Commonwealth. A companion report, "Women & Cancer", addresses risk factors, prevention, screening, symptoms, and detection of common cancers in women. Although cancer can be frightening, survival rates from cancer continue to improve. Learning about your risk and how to reduce it and understanding the methods of early detection are the best ways to protect yourself.

Before you learn about specific types of cancer, you may want some basic information:

Q• What is cancer?
A• Cancer is a general name for a variety of diseases where abnormal cells grow out of control. Cancer cells may grow faster than normal cells and spread through the body, destroying healthy parts of the body.

Q• Why do people get cancer?
A• No one really knows exactly why some people get cancer and some don't. Some cancers do seem to run in families (these cancers are also called ***genetic*** or ***inherited***), and some cancers seem to come from specific activities, like smoking or being exposed to lots of chemicals in the environment or workplace.

Q• Is there anything I can do to keep from getting cancer?
A• You can improve your chances of **not** getting cancer by not smoking, by wearing sunscreen, by eating a healthy diet, by getting adequate physical activity, and by following other risk reduction efforts. This doesn't mean you won't get cancer, but it reduces your ***risk*** (your chance of developing cancer).

Q• Is there anything else I can do to protect myself?
A• Yes! There are tests (called ***screenings***) that can find cancer early. In many cases, people whose cancers are found early can be more successfully treated and will survive longer, and their cancers are less likely to return. Some screening tests include Pap tests for cervical cancer and mammograms for breast cancer.

How to use this report:

How can you use these reports and charts in a way that makes sense for **you**?

Here are some definitions and key words to look for:

- **Incidence:** new cancer cases reported per time period.

- **Mortality:** deaths from a type of cancer per time period.

Incidence and mortality data are presented in several ways. First, we can look at the actual ***number*** of people who have been diagnosed with or have died of a type of cancer. We can then look at ***percentages*** -- what proportion of all cancers diagnosed in women were breast cancers, for example. Finally, we can look at incidence and mortality ***rates***, which tell us how many people were diagnosed with or died of a type of cancer in a given size population. (The population usually used is "per 100,000"; here, rates are given "per 100,000 females.")

Two types of rates are used in this report:

- **Age-adjusted rates** are overall rates that take into account how old someone was when she was diagnosed with or died of a type of cancer. We can compare age-adjusted rates for different types of cancers to see which cancers have the highest rates, and we can compare age-adjusted rates for the same cancer over time to see how the rate has changed. This report uses the 1970 U.S. population as the standard in calculating age-adjusted incidence and mortality rates.

- **Age-specific rates** look at the number of people who have been diagnosed with or have died of a type of cancer in a particular age group, and allow us to compare how the rate of cancer changes with age.

More information about rates is given in the Glossary, on pages 51-53.

Some cancer-related terms to know are:

- **Origin** or **primary site:** the organ or part of the body where a cancer starts.

- **Invasive:** a cancer that has spread beyond the layer of cells where it started into the tissue around it, and has the potential to spread to other parts of the body.

- **Metastasic:** a cancer that has spread from the site where it started to other parts of the body, such as to the bone or the liver.

- **Staging** describes how far along a cancer has developed in a person's body. This is important to know, because treatment will vary depending on the stage at diagnosis.

Treatment is usually more successful when cancers are found early. This is why screening greatly improves a person's chances of surviving cancer.

Cancer stages are:

In situ: the earliest stage of cancer, before the cancer has spread, when it is limited to a small number of cells and has not invaded the organ itself. As diagnostic technology advances, more and more cancers are being found at the *in situ* stage. Typically statistics do not combine invasive and *in situ* cancers. The incidence data presented in this report are for invasive cancers only.

Localized: cancer found only in the body part (organ) where it began; it hasn't spread to any other parts.

Regional: the cancer has spread beyond the original point where it started to the nearest surrounding parts of the body (other tissues).

Distant: the cancer has spread to parts of the body far away from the original point where it began. This is the most difficult stage to treat, since the cancer has spread through the body.

Unstaged: there is not enough information about the cancer to assign a stage.

Other definitions are given in the Glossary at the end of this book (pages 51-53).

How this report is organized:

This report is organized into several sections:

- First is an **overall** look at the impact of cancer on women in Massachusetts.

- Next, **seven specific cancers** are reviewed: breast, cervical, colorectal, lung, melanoma, ovarian and uterine. These cancers were chosen because they are common cancers in women in Massachusetts. Statistics on these cancers are provided, including how many women are diagnosed with a type of cancer (**incidence**), how far along a cancer has developed when a woman is diagnosed (**staging**), the percentage of woman diagnosed with a cancer who have survived that cancer after five years (**relative survival**), and how many women die of a type of cancer (**mortality**).

- The last section of the report contains further information on **how you can learn more** about these cancers.

- There is also a **glossary**, which contains explanations of the statistical terms used in this report.

Data sources used in this report:

The Massachusetts Cancer Registry (MCR): All Massachusetts incidence and staging data are provided by the Massachusetts Cancer Registry, which is part of the Massachusetts Department of Public Health (MDPH). The MCR collects reports of all cancer cases newly diagnosed in Massachusetts residents, and summarizes cancer incidence in its annual report. The most recent year of Massachusetts cancer incidence data available at this time is 1999, although this report only covers the period 1989-1998.

The Registry of Vital Records and Statistics: All Massachusetts cancer death data are from the MDPH Registry of Vital Records and Statistics, which has legal responsibility for collecting and reporting deaths of Massachusetts residents. The most recent year of Massachusetts cancer mortality data available at this time is 2000, although this report only covers the period 1989-1998.

Surveillance, Epidemiology and End Results (SEER): National data on cancer incidence, mortality, staging and survival are from the National Cancer Institute's SEER Program. The SEER Program is the best source of information on national cancer incidence. It currently includes data from population-based cancer registries in 14 states and geographic areas, covering approximately 14% of the United States population. SEER also publishes national mortality data from the National Center for Health Statistics. The most recent year of SEER data available at this time is 1999.

SUMMARY DATA

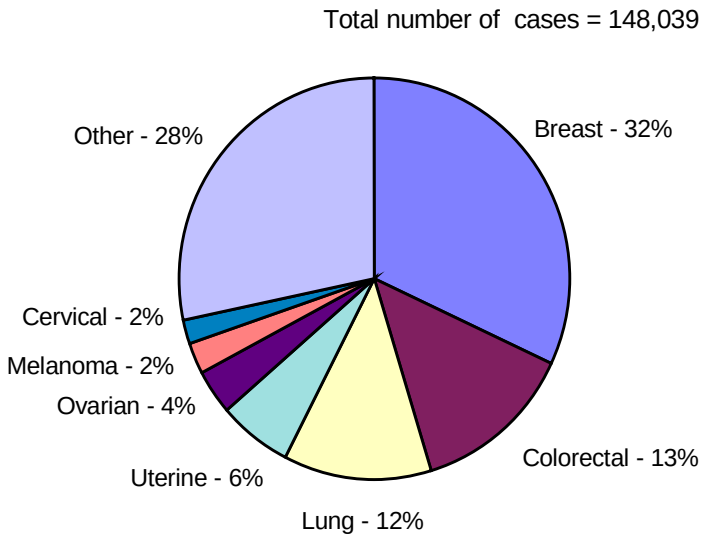
INCIDENCE

Between 1989 and 1998, 148,039 women in Massachusetts were diagnosed with new cancers. (This number excludes skin cancers other than melanomas.) Breast cancer was the leading type of cancer diagnosed, with 47,279 cases reported during this period, accounting for 32% of all cancers diagnosed. In descending order, the next most common cancers diagnosed were colorectal, lung and uterine cancers. Ovarian cancer, melanoma and cervical cancer each represent fewer than 5% of new cancer diagnoses. All other types of cancer each represent fewer than 5% of new cancer diagnoses.

Table 1. Cancer Incidence in Massachusetts Females 1989-1998

Type of Cancer:	Number of New Cases	Percentage of New Cases
Breast	47,279	31.9%
Colorectal	19,705	13.3%
Lung	18,254	12.3%
Uterine (Endometrial)	8,813	6.0%
Ovarian	5,666	3.8%
Melanoma	3,517	2.4%
Cervical	3,061	2.1%
Other	41,744	28.2%
Total	148,039	100.0%

Figure 1. Cancer Incidence in Massachusetts Females 1989-1998



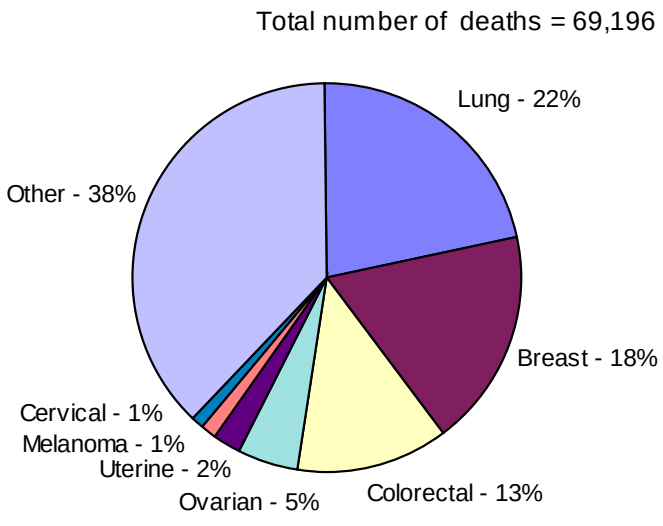
MORTALITY

Between 1989 and 1998, 69,196 Massachusetts women died of cancer. Lung cancer has become the leading cause of cancer deaths in women, although it is only the third most commonly *diagnosed* cancer. It is now responsible for 22% of all cancer deaths. Ovarian cancer is responsible for 4.9% of cancer deaths in women (the fourth highest mortality), versus 3.8% of new cases (the fifth highest incidence). Other types of cancer each represent fewer than 5% of cancer deaths.

Table 2. Cancer Mortality in Massachusetts Females 1989-1998

Type of Cancer:	Number of Deaths	Percentage of Deaths
Lung	15,259	22.1%
Breast	12,163	17.6%
Colorectal	8,787	12.7%
Ovarian	3,369	4.9%
Uterine (Endometrial)	1,578	2.3%
Melanoma	906	1.3%
Cervical	868	1.3%
Other	26,266	38.0%
Total	69,196	100.0%

Figure 2. Cancer Mortality in Massachusetts Females 1989-1998



BREAST CANCER

INCIDENCE

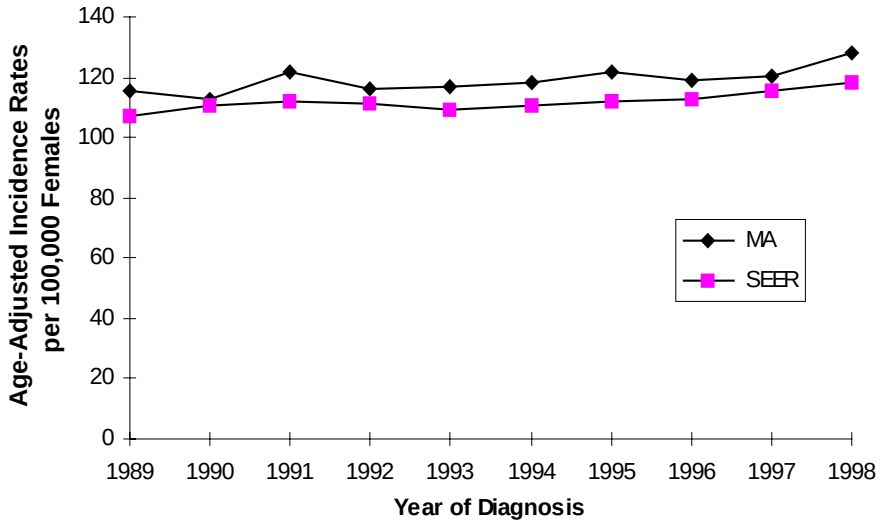
The average US woman who lives to be 85 years has about a 1 in 8 chance of developing invasive breast cancer sometime during her lifetime. This is called a *cumulative lifetime risk*. It takes into account the fact that the chance of developing breast cancer is very different at different ages (1 in 2,000 for women in their 20s, 1 in 67 for women in their 40s, and 1 in 20 for women in their 60s), and sums up this risk over a lifetime. The risk for a white woman is about the average (about 1 in 7, or 13.8%), while a black woman has a lower lifetime risk (about 1 in 10, or 10.1%).

In Massachusetts, breast cancer is the type of cancer diagnosed most often in women (not counting non-melanoma skin cancers). Between 1989 and 1998, 47,279 new cases of breast cancer were reported -- on average, about 4,700 women a year. This was 32% of all newly diagnosed cancers in women. In 1998, 5,306 women were diagnosed with breast cancer, an age-adjusted incidence rate of 128.3 per 100,000 women.

The incidence rate for breast cancer in Massachusetts increased nearly 11% between 1989 and 1998, from 115.7 per 100,000 to 128.3 per 100,000. Nationally, rates also increased nearly 11% during this same time period, from 106.8 per 100,000 to 118.1 per 100,000.

The incidence of breast cancer in Massachusetts is about 7% higher than rates for the US based upon the SEER program for the period 1994-1998. This may be due in part to two things. First, the northeastern part of the United States has a larger proportion of women at increased risk of breast cancer because of some risk factors, such as late age at first birth. Also, Massachusetts tends to have higher rates of breast cancer screening than many other states, and a larger proportion of cases found early. This tends to make breast cancer rates in Massachusetts higher than in areas with less early detection.

Figure 3. Female Breast Cancer Incidence Trends for Massachusetts, 1989-1998 and SEER Areas, 1989-1998

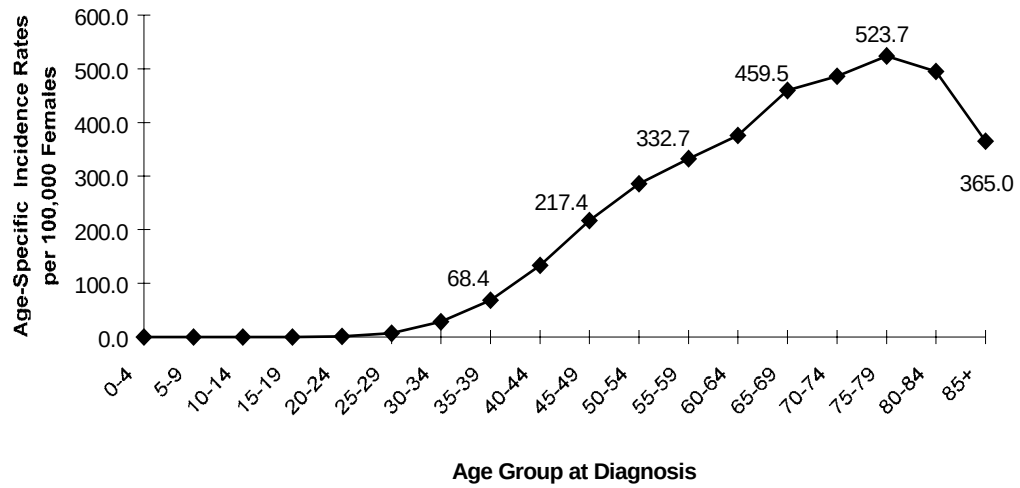


Breast Cancer Age-Adjusted Incidence Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	115.7	113.0	121.7	116.5	117.2	118.1	121.9	119.1	120.1	128.3
SEER	106.8	110.4	112.1	111.2	108.9	111.0	112.3	113.0	116.7	118.1

Among Massachusetts females, breast cancer incidence increases steadily with age, reaching a peak of 524 per 100,000 in women aged 75-79 years. The rate then decreases in women aged 80 years and older.

Figure 4. Rate of Breast Cancer by Age Group Massachusetts Females, 1994-1998



STAGING

While breast cancer incidence has increased over time, the proportion of women being diagnosed at an early stage has also increased. In 1998, more than 70% of breast cancers reported in Massachusetts women were detected at either an *in situ* or localized stage. This earlier diagnosis of breast cancer -- before the cancer spreads to more distant sites -- helps treatment to be more effective.

Table 3. Breast Cancer Stage at Diagnosis
Massachusetts Females, 1992, 1995 and 1998

Stage at Diagnosis:	**1992**	**1995**	**1998**
In situ (limited to starting point)	14.9 %	18.8 %	21.3 %
Localized (confined to organ where it began)	54.4 %	52.1 %	52.7 %
Regional (spread to some nearby areas)	21.4 %	21.1 %	19.8 %
Distant (spread into other parts of the body)	4.2 %	3.2 %	3.4 %
Unstaged (a stage can't be assigned)	5.1 %	4.9 %	2.8 %

SURVIVAL

Overall, about 85% of US women diagnosed with breast cancer survive their breast cancer for at least five years. Relative survival rates tend to be better for women diagnosed at an earlier stage, and relative survival rates are increasing as more women get screened regularly and more cancers are diagnosed at an earlier and more treatable stage.

There are some differences in relative survival rates by age and by race. Older women tend to have slightly better relative survival rates than younger women, possibly because the type of breast cancer many younger women have can be more aggressive (faster growing and less receptive to treatment) than in older women. White women have consistently higher relative survival rates than black women. The National Cancer Institute attributes the lower survival rates in black women to the likelihood of the disease being more advanced at the time of diagnosis, due to less access to care, beliefs about breast cancer screening, and the possibility of a more aggressive form of the disease in black women.

Table 4 at a glance:

- Relative survival rates are better for women diagnosed at earlier stages.
- White women have better relative survival rates than black women.
- Older women have slightly better relative survival rates than younger women.

Table 4. Breast Cancer 5-Year Relative Survival Rates
Females, United States, 1992-1997

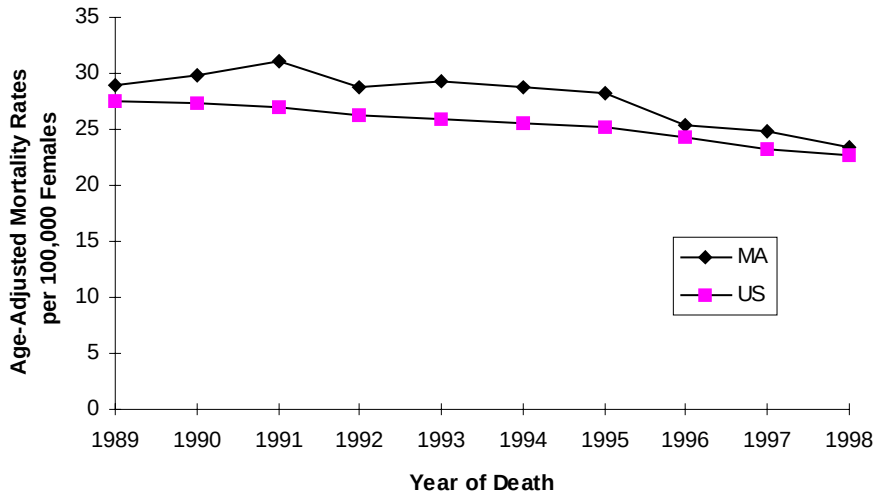
	Race:		
	All Races	White	Black
Overall:	85.5 %	86.8 %	72.0 %
By Stage at Diagnosis:			
Localized (confined to organ where it began)	96.4 %	97.0 %	88.5 %
Regional (spread to some nearby areas)	77.7 %	79.4 %	65.6 %
Distant (spread into other parts of the body)	21.1 %	22.4 %	14.7 %
By Age at Diagnosis:			
Under 65 years	85.2 %	86.8 %	71.9 %
65 years and over	86.5 %	87.4 %	72.6 %

MORTALITY

For many years, breast cancer ranked as the number one cause of death from cancer for women both statewide and nationally. Between 1989 and 1998, 12,163 Massachusetts women died of breast cancer, an average of about 1,200 women a year. In recent years, however, lung cancer has overtaken breast cancer as the leading cause of cancer death in women. In 1998, 1,096 Massachusetts women died of breast cancer, a rate of 23.4 deaths per 100,000. For the period 1994-1998, Massachusetts' breast cancer mortality rate of 26.1 per 100,000 was 7% higher than the national rate of 24.2 per 100,000, and was the 9th highest in the nation.

Even though more cases of breast cancer have been diagnosed in past years, death rates have not increased. They have decreased slightly in recent years in Massachusetts and the US as a whole. This is due in part to the increased proportion of cases being diagnosed at earlier stages, and to women living longer with their disease, possibly due to more effective treatment.

Figure 5. Female Breast Cancer Mortality Trends for Massachusetts, 1989-1998 and United States, 1989-1998



Breast Cancer Age-Adjusted Mortality Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	28.9	29.9	31.0	28.8	29.3	28.8	28.2	25.3	24.9	23.4
US	27.5	27.4	27.0	26.2	25.9	25.5	25.2	24.3	23.3	22.7

CERVICAL CANCER *

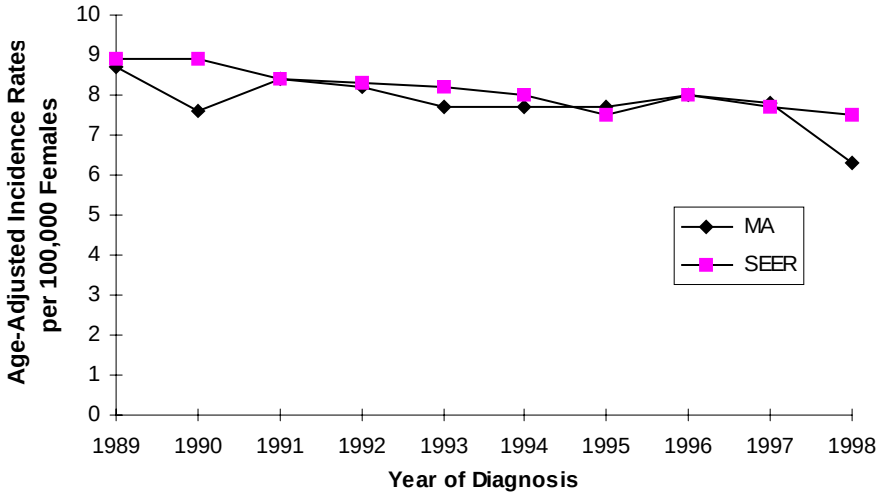
INCIDENCE

Based on national data, the average woman has about a 1 in 118 chance (less than 1%) of developing invasive cervical cancer at some point in her life. The risk of a white woman developing invasive cervical cancer is slightly lower (1 in 128), while a black woman's risk is higher (1 in 93).

In Massachusetts, 3,061 new cases of invasive cervical cancer were reported between 1989 and 1998 -- about 300 cases a year. During this period, invasive cervical cancer accounted for 2.1% of all newly diagnosed cancers in females. In 1998, 266 Massachusetts women were diagnosed with invasive cervical cancer, an age-adjusted incidence rate of 6.3 per 100,000.

Invasive cervical cancer incidence in Massachusetts is similar to the national incidence rate. Massachusetts incidence has decreased 28% since 1989, and national incidence has shown a decrease of 16% since 1989.

Figure 6. Invasive Cervical Cancer Incidence Trends for Massachusetts, 1989-1998 and SEER Areas, 1989-1998



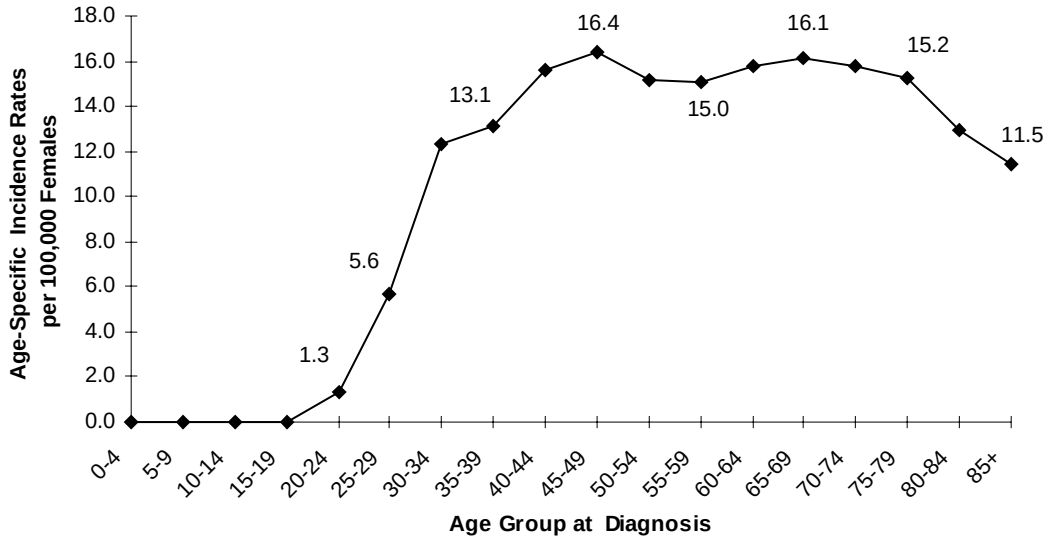
Cervical Cancer Age-Adjusted Incidence Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	8.7	7.6	8.4	8.2	7.7	7.7	7.7	8.0	7.8	6.3
SEER	8.9	8.9	8.4	8.3	8.2	8.0	7.5	8.0	7.7	7.5

* The cervix is the narrow, lower portion of the uterus (womb), the birth canal.

Invasive cervical cancer incidence increases steadily with age until age 45-49 years, remains stable between 50-70 years, and then decreases among women aged over 70 years.

Figure 7. Rate of Invasive Cervical Cancer by Age Group
Massachusetts Females, 1994-1998



STAGING

Most cervical cancers are found at the earliest stages, when it is most curable. In 1995, about 85% of the cases were found while *in situ*, and 94% were either *in situ* or localized.

Please note that *in situ* cervical cancers were reportable to the Massachusetts Cancer Registry (MCR) between 1992 and 1997. Beginning in 1998, most *in situ* cervical cancers were no longer reportable to the MCR. This change in reporting resulted in a large decrease in the number of cases reported, and contributed to the significant change in the distribution of stage at diagnosis observed in 1998.

Table 5. Cervical Cancer Stage at Diagnosis Massachusetts Females, 1992, 1995 and 1998

Stage at Diagnosis:	1992	1995	1998
In situ (limited to starting point)	77.1 %	85.1 %	* 12.5 %
Localized (confined to organ where it began)	15.2 %	8.7 %	48.0 %
Regional (spread to some nearby areas)	4.0 %	4.3 %	25.7 %
Distant (spread into other parts of the body)	1.1 %	0.9 %	7.9 %
Unstaged (a stage can't be assigned)	2.6 %	1.0 %	5.9 %

* The change in reporting of *in situ* cervical cancers contributed to the significant change in the distribution of stage at diagnosis observed in 1998. *In situ* cases in 1998 are cases of adenocarcinoma, which were still reportable to the Massachusetts Cancer Registry.

SURVIVAL

Preinvasive cervical cancer is almost 100% curable. That's why regular Pap smears are so important, so that cervical cancers can be found early.

Overall, about 70% of women diagnosed with invasive cervical cancer survive their cervical cancer for 5 years or more after diagnosis. This percentage has stayed fairly constant over time. There are differences in relative survival by age and by race. Relative survival is significantly better for women under age 50 years. Researchers think that this difference is because older women do not get screened by Pap smears as frequently as younger women. This means that when cervical cancer is found in an older woman, it's frequently detected at a more advanced stage, when the chances of effective treatment and survival are lower. Black women also tend to be diagnosed at a later stage, with poorer survival as a result. Even taking age and stage at diagnosis into account, black women still tend to have lower relative survival rates than white women. The reason for this is not fully understood.

Table 6 at a glance:

- Relative survival rates are poorer for women diagnosed at later stages.
- White women have better relative survival rates than black women.
- Younger women have better relative survival rates than older women.

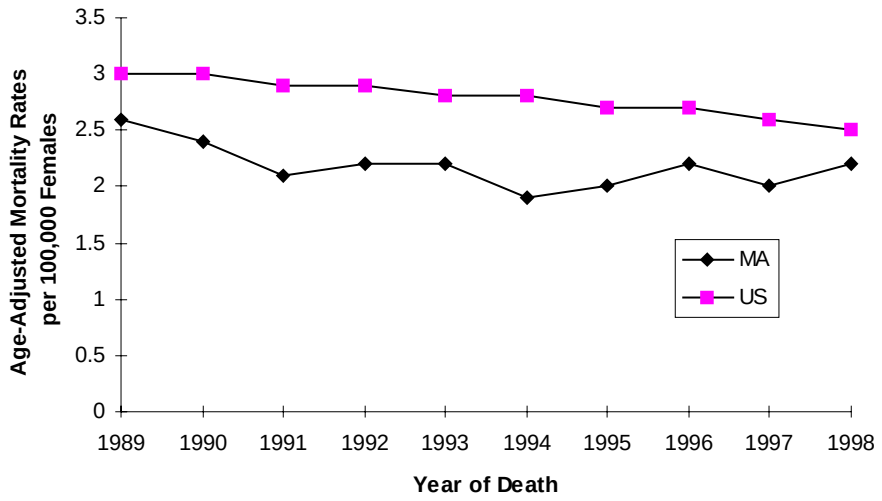
Table 6. Invasive Cervical Cancer 5-Year Relative Survival Rates Females, United States, 1992-1997

	Race:		
	All Races	White	Black
Overall:	69.9 %	71.5 %	57.5 %
By Stage at Diagnosis:			
Localized (confined to organ where it began)	91.9 %	92.2 %	86.6 %
Regional (spread to some nearby areas)	49.1 %	49.9 %	37.1 %
Distant (spread into other parts of the body)	14.6 %	16.8 %	6.2 %
By Age at Diagnosis:			
Under 65 years	74.7 %	76.6 %	59.4 %
65 years and over	49.1 %	48.1 %	49.4 %

MORTALITY

Between 1989 and 1998, 868 women in Massachusetts died of invasive cervical cancer, an average of about 90 women per year. Cervical cancer death rates are slowly but steadily decreasing. This is largely due to increases in cervical cancer screening, resulting in cancers being detected earlier. By 1998, the Massachusetts rate had declined to 2.2 per 100,000 – a 15% decrease since 1989. Nationally, rates have declined 17%, from 3.0 per 100,000 in 1989 to 2.5 per 100,000 in 1998. Even though incidence rates are about the same in Massachusetts as in the SEER areas, death rates among Massachusetts women were 26% lower than national rates for the period 1994-1998.

Figure 8. Invasive Cervical Cancer Mortality Trends for Massachusetts, 1989-1998 and United States, 1989-1998



Cervical Cancer Age-Adjusted Mortality Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	2.6	2.4	2.1	2.2	2.2	1.9	2.0	2.2	2.0	2.2
US	3.0	3.0	2.9	2.9	2.8	2.8	2.7	2.7	2.6	2.5

COLORECTAL CANCER

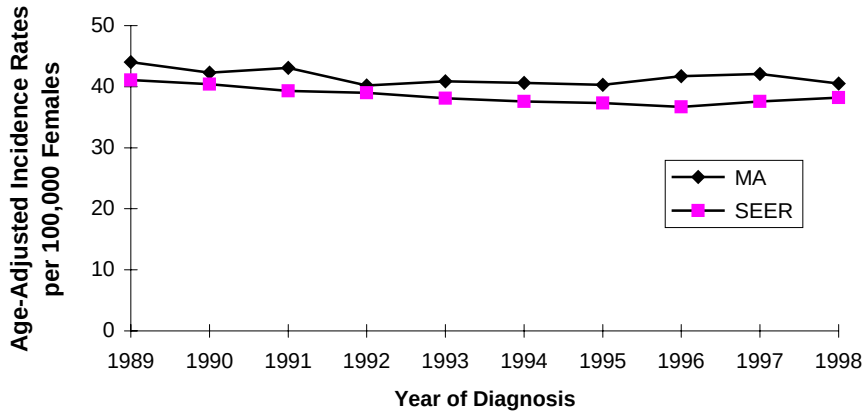
INCIDENCE

Based on national data, the average woman has approximately a 5.4% lifetime risk of developing invasive colorectal cancer, or about a one in 18 chance.

In Massachusetts, 19,705 new cases of colorectal cancer were reported in women between 1989 and 1998 -- an average of about 2,000 cases a year. Colorectal cancer was the second most common type of cancer in females during this period, accounting for 13% of all newly diagnosed cancers. In 1998, 1,994 women in the state were diagnosed with colorectal cancer, for an age-adjusted incidence rate of 40.5 per 100,000.

Overall, the age-adjusted incidence rate of colorectal cancer in Massachusetts women has decreased over time, from 44.0 per 100,000 in 1989 to 40.5 per 100,000 in 1998 -- a decrease of about 8%. This decrease was about the same in Massachusetts as in the country as a whole (about 7% between 1989 and 1998).

Figure 9. Female Colorectal Cancer Incidence Trends for Massachusetts, 1989-1998 and SEER Areas, 1989-1998

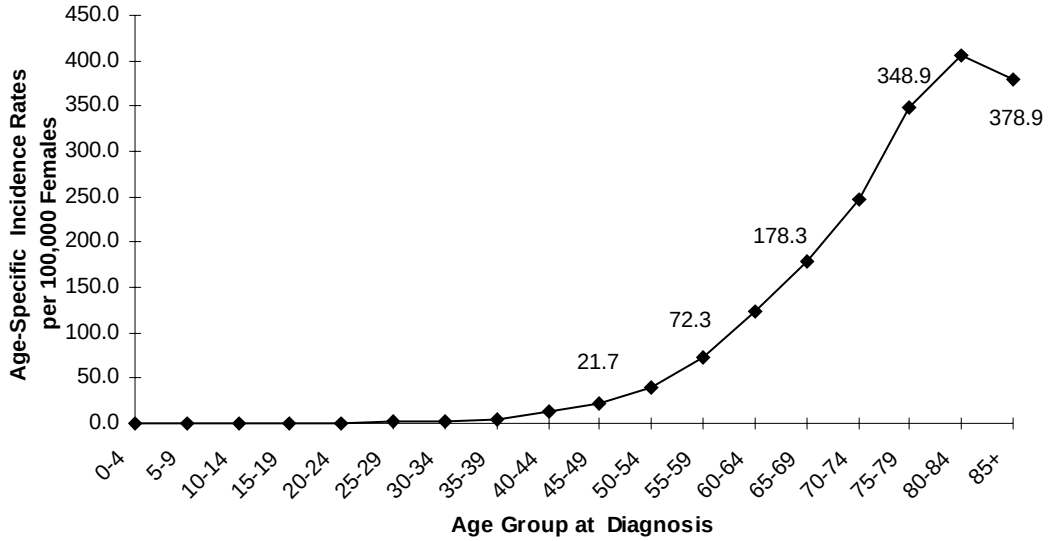


Colorectal Cancer Age-Adjusted Incidence Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	44.0	42.3	43.1	40.2	40.9	40.6	40.3	41.7	42.1	40.5
SEER	41.1	40.4	39.3	39.0	38.1	37.6	37.3	36.7	37.6	38.2

The incidence of colorectal cancer increases steadily with age, reaching about 405 cases per 100,000 in women aged 80-84 years in Massachusetts.

Figure 10. Rate of Colorectal Cancer by Age Group
Massachusetts Females, 1994-1998



STAGING

For colorectal cancer, there was very little change in distribution of the stage at diagnosis between 1992 and 1998. Overall, the increase in early detection seen in some other cancers, such as breast cancer or cervical cancer, has not been observed in colorectal cancer.

Table 7. Colorectal Cancer Stage at Diagnosis
Massachusetts Females, 1992, 1995 and 1998

Stage at Diagnosis:	1992	1995	1998
In situ (limited to starting point)	6.2 %	5.8 %	2.6 %
Localized (confined to organ where it began)	23.1 %	25.9 %	28.7 %
Regional (spread to some nearby areas)	45.3 %	45.0 %	44.7 %
Distant (spread into other parts of the body)	16.5 %	17.2 %	16.0 %
Unstaged (a stage can't be assigned)	8.9 %	6.1 %	8.1 %

SURVIVAL

Relative survival rates for women with colorectal cancer have increased approximately 12% since 1980, to about 61%. This has been due primarily to a slight increase in the relative survival rates for white women; relative survival has remained essentially unchanged for black women. White women have higher relative survival rates than black women for all stages except distant stage and for all age categories. Younger women also have slightly better relative survival rates than older women.

Table 8 at a glance:

- Relative survival rates are poorer for women diagnosed at later stages.
- White women have better relative survival rates than black women.
- Younger women have slightly better relative survival rates than older women.

Table 8. Colorectal Cancer 5-Year Relative Survival Rates Females, United States, 1992-1997

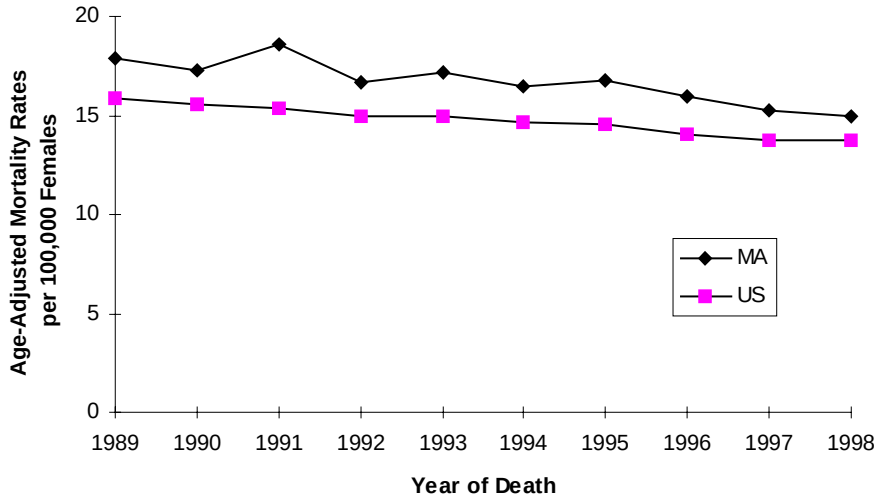
	Race:		
	All Races	White	Black
Overall:	60.8 %	61.6 %	51.7 %
By Stage at Diagnosis:			
Localized (confined to organ where it began)	89.4 %	90.0 %	83.7 %
Regional (spread to some nearby areas)	64.7 %	65.6 %	55.4 %
Distant (spread into other parts of the body)	8.6 %	8.7 %	9.1 %
By Age at Diagnosis:			
Under 65 years	62.4 %	63.7 %	54.2 %
65 years and over	60.1 %	60.8 %	49.7 %

MORTALITY

Colorectal cancer is the third leading cause of cancer deaths in women in Massachusetts, accounting for 13% of cancer deaths between 1989 and 1998. During this period, 8,787 Massachusetts women died of colorectal cancer, an average of 880 each year. In 1998, 832 women died of colorectal cancer, for an age-adjusted mortality rate of 14.9 per 100,000.

Colorectal cancer death rates for Massachusetts women are slightly higher than for women nationally. Since 1989, the age-adjusted mortality rate in Massachusetts women has declined 17%, from 17.9 per 100,000 in 1989 to 14.9 per 100,000 in 1998. US rates decreased 14% between 1989 and 1998, from 15.9 per 100,000 to 13.7 per 100,000.

Figure11. Female Colorectal Cancer Mortality Trends for Massachusetts, 1989-1998 and United States, 1989-1998



Colorectal Cancer Age-Adjusted Mortality Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	17.9	17.3	18.6	16.7	17.2	16.5	16.8	16.0	15.3	14.9
US	15.9	15.6	15.3	15.0	15.0	14.6	14.5	14.0	13.7	13.7

LUNG CANCER

Note: All information and data below refer to both lung cancer and to cancer of the bronchus (the tube(s) responsible for carrying air to and from the lungs).

INCIDENCE

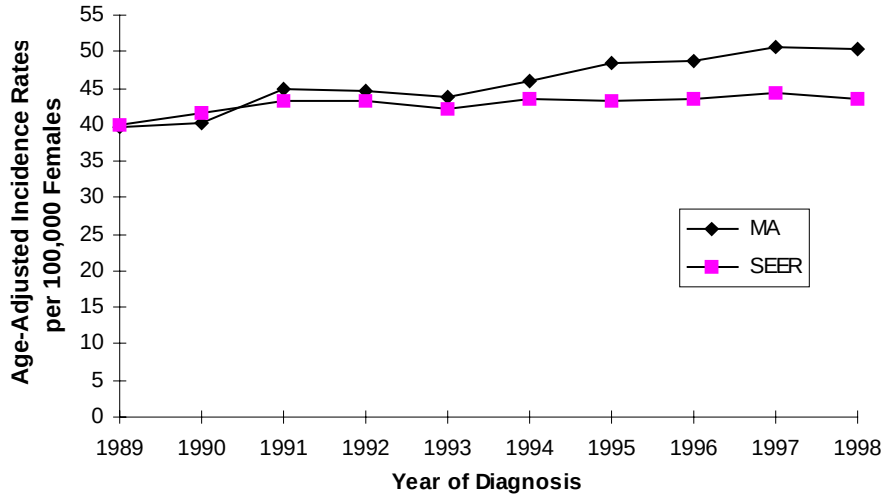
Based on national data, the average woman has approximately a 5.8% lifetime risk of developing invasive lung cancer, or about a one in 18 chance. The risk for a white woman is slightly higher, about one in 17, while a black woman has a slightly lower risk, about one in 20. It's important to note that these are average risks, based on data from both smokers and non-smokers. A smoker will have a much higher likelihood of developing lung cancer, and a non-smoker will have a lower risk.

Eighty five percent of all lung cancers are caused by smoking. The risk of lung cancer is *10 times greater* for women who smoke up to one pack of cigarettes a day and *20 times greater* for woman who smoke more than one pack of cigarettes a day than for women who do not smoke.

In Massachusetts, 18,254 new cases of lung cancer in women were reported between 1989 and 1998 -- on average, about 1,800 cases per year. During the period as a whole, lung cancer accounted for 12% of all newly diagnosed cancers in women, and was the third most common cancer diagnosed in women, after breast and colorectal cancer. In 1991, however, lung cancer moved ahead of colorectal cancer to become the second most commonly diagnosed cancer in women. In 1998, 2,130 women were diagnosed with lung cancer, an age-adjusted incidence rate of 50.3 per 100,000.

The incidence of lung cancer in Massachusetts women has increased slowly but steadily over time, from 39.7 per 100,000 in 1989 to 50.3 per 100,000 in 1998, adding up to an increase in incidence of over 26% since 1989. SEER data show a smaller increase of 8%, from 40.1 per 100,000 in 1989 to 43.4 per 100,000 in 1998. For the period 1994-1998, Massachusetts' incidence rate of 49.2 per 100,000 was 13% higher than the SEER rate of 43.5 per 100,000.

Figure 12. Female Lung Cancer Incidence Trends for Massachusetts, 1989-1998 and SEER Areas, 1989-1998

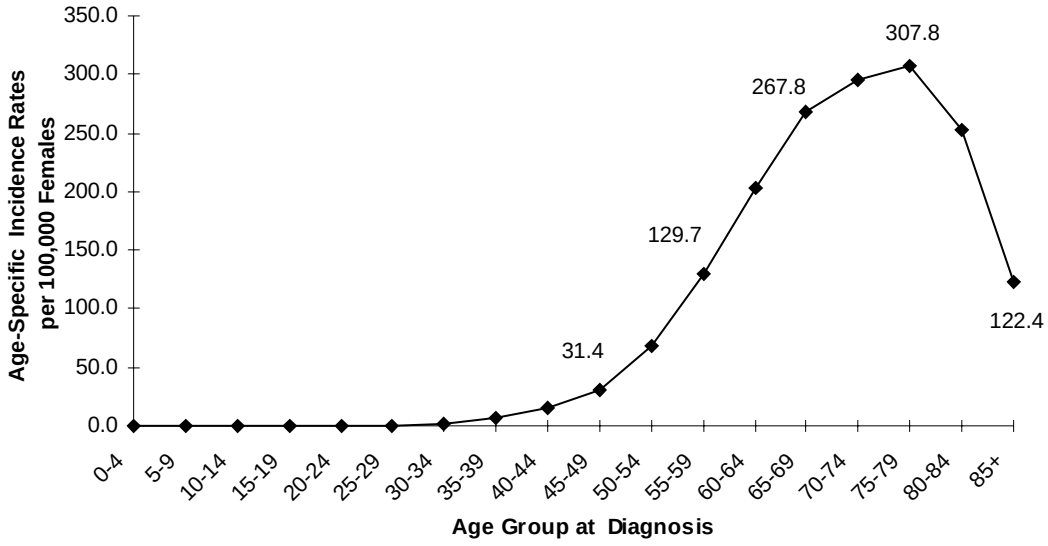


Lung Cancer Age-Adjusted Incidence Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	39.7	40.2	45.0	44.5	43.8	46.1	48.5	48.7	50.5	50.3
SEER	40.1	41.6	43.1	43.1	42.3	43.4	43.1	43.5	44.3	43.4

Lung cancer incidence increases with age, peaking at about 308 cases per 100,000 women aged 75-79 years in Massachusetts, and then declines in those aged 80 years and older.

Figure 13. Rate of Lung Cancer by Age Group Massachusetts Females, 1994-1998



STAGING

Overall, there has been almost no change in the distribution of stage at diagnosis of lung cancer in women, reflecting the difficulties in detecting lung cancer at an early stage. About 67% of lung cancers are detected only after they have spread, either to nearby areas or to other parts of the body, and are much less treatable than those found early.

Table 9. Lung Cancer Stage at Diagnosis
Massachusetts Females, 1992, 1995 and 1998

Stage at Diagnosis:	1992	1995	1998
In situ (limited to starting point)	0.1 %	0.1 %	0.0 %
Localized (confined to organ where it began)	25.0 %	24.4 %	21.6 %
Regional (spread to some nearby areas)	25.6 %	29.2 %	29.4 %
Distant (spread into other parts of the body)	37.6 %	37.3 %	37.6 %
Unstaged (a stage can't be assigned)	11.8 %	9.0 %	11.3 %

SURVIVAL

Lung cancer has the poorest relative survival rate of the seven cancers included in this report -- only about 16% of women diagnosed with lung cancer survive their lung cancer at least five years after diagnosis. Women diagnosed at a localized stage have about a 50% 5-year relative survival rate. Unfortunately, however, only about a quarter of cases are diagnosed this early. Most lung cancers are diagnosed at a regional or distant stage, when the cancer has spread beyond the lung. Rates for women presenting with distant disease are particularly low, with only about 3% surviving their lung cancer at least five years.

White women show slightly better relative survival than black women for all age groups and all stages except distant; the difference in rates is largest in younger age groups. Overall, relative survival is slightly better among younger women, although it is still low.

Women have higher survival rates than men for each stage and type. This is primarily because of the higher proportion of adenocarcinomas among women, a histology (tissue type) with a better prognosis (likelihood of longer survival) than the type men usually get.

Table 10 at a glance:

- Relative survival rates are poorer for women diagnosed at later stages.
- White women have better relative survival rates than black women.
- Younger women have better relative survival rates than older women.

Table 10. Lung Cancer 5-Year Relative Survival Rates
Females, United States, 1992-1997

	Race:		
	All Races	White	Black
Overall:	16.5 %	16.8 %	14.1 %
By Stage at Diagnosis:			
Localized (confined to organ where it began)	52.2 %	52.7 %	47.5 %
Regional (spread to some nearby areas)	23.4 %	23.5 %	19.1 %
Distant (spread into other parts of the body)	2.9 %	2.8 %	3.7 %
By Age at Diagnosis:			
Under 65 years	20.2 %	20.7 %	16.8 %
65 years and over	14.1 %	14.4 %	11.3 %

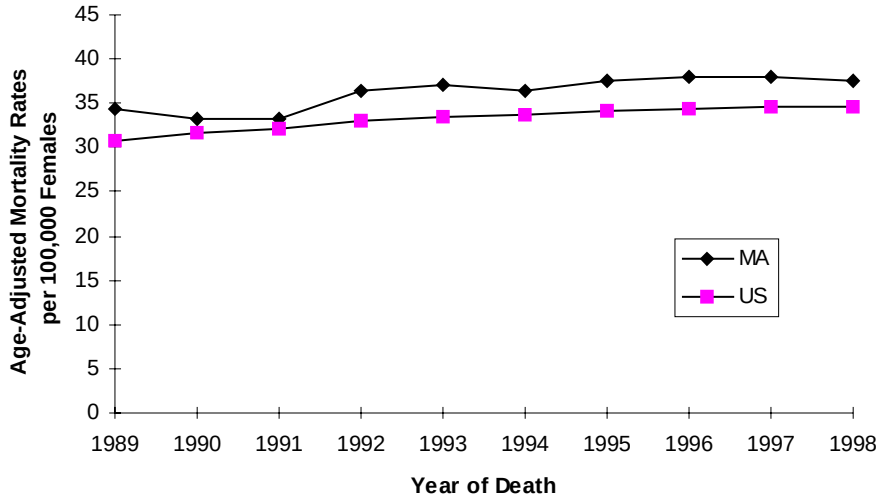
MORTALITY

Between 1989 and 1998, 15,259 women died of lung cancer in Massachusetts. The annual number of deaths increased steadily during that period, from 1,348 in 1989 to 1,664 in 1998, and mortality rates increased 9% from 34.4 per 100,000 in 1989 to 37.5 per 100,000 in 1998. In 1989, lung cancer became the leading cause of cancer deaths among Massachusetts women, moving ahead of breast cancer.

This increase in lung cancer mortality in women continues in large part due to historic smoking patterns in women. In general, women began smoking in large numbers later in time than men did. Because of this pattern, and because of the lag time between cigarette smoking and the development of lung cancer, the true effect of this change in smoking habits in women is only now being seen, both in terms of incidence and mortality.

Lung cancer mortality rates have been steadily increasing both nationally and in Massachusetts. Overall, lung cancer mortality was about 9% higher among Massachusetts women than nationally for the period 1994-1998. National data show similar trends, however, with the age-adjusted mortality rate increasing 12% between 1989 and 1998.

Figure 14. Female Lung Cancer Mortality Trends for Massachusetts, 1989-1998 and United States, 1989-1998



Lung Cancer Age-Adjusted Mortality Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	34.4	33.3	33.2	36.4	37.0	36.3	37.6	38.1	37.9	37.5
US	30.8	31.6	32.2	33.1	33.5	33.7	34.2	34.3	34.5	34.6

MELANOMA *

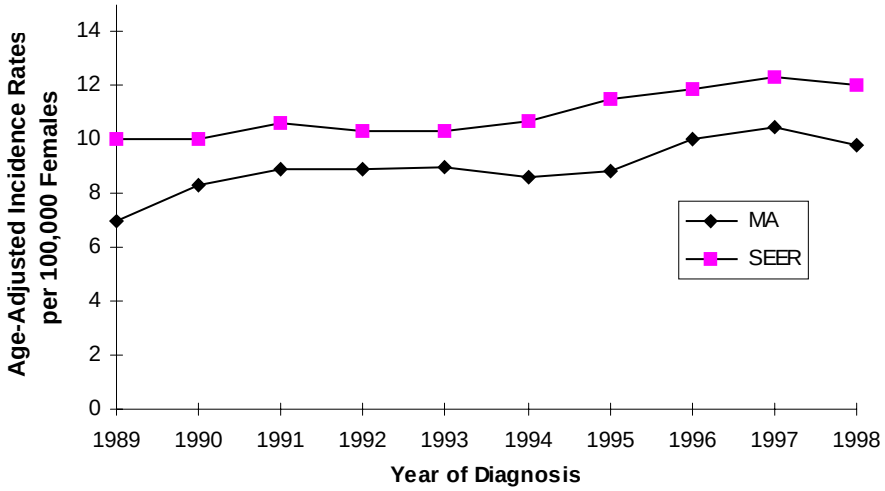
INCIDENCE

Based on national data, the average woman has approximately a 1.2% lifetime risk of developing invasive melanoma, or about a one in 82 chance. The risk for a white woman is about one in 71, while a black woman has a much lower risk, about one in 1,250.

In Massachusetts, 3,517 new cases of melanoma were reported in females between 1989 and 1998 -- about 350 cases a year. During this interval, melanoma accounted for 2.4% of newly diagnosed cancers in females. In 1998, 415 Massachusetts women were diagnosed with melanoma, an age-adjusted incidence rate of 9.8 per 100,000.

The incidence rate of melanoma in Massachusetts women has increased approximately 40% since 1989, from 7.0 per 100,000 to 9.8 per 100,000 in 1998. Rates have fluctuated during this period, however, because of the relatively small number of women diagnosed annually. State incidence has been slightly lower than national incidence, perhaps reflecting the lower levels of exposure to sunlight in the northeastern US. Nationally, incidence has increased 20% during this period, from 10.0 per 100,000 in 1989 to 12.0 per 100,000 in 1998.

Figure 15. Female Melanoma Cancer Incidence Trends for Massachusetts, 1989-1998 and SEER Areas, 1989-1998



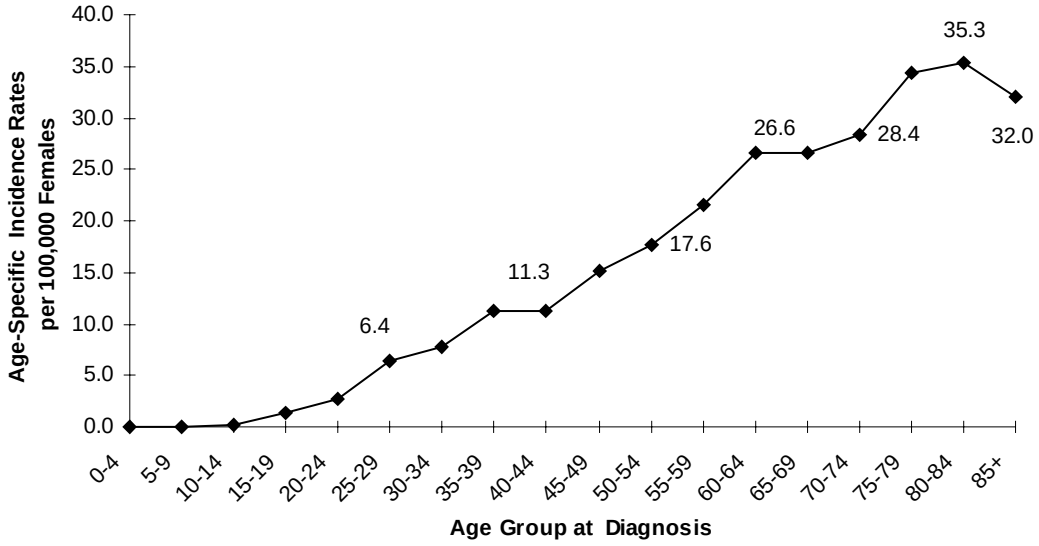
Melanoma Age-Adjusted Incidence Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	7.0	8.3	8.9	8.9	9.0	8.6	8.8	10.0	10.5	9.8
SEER	10.0	10.0	10.6	10.3	10.3	10.7	11.5	11.9	12.3	12.0

* Melanoma is the most deadly form of skin cancer. Other forms of skin cancer are basal-cell and squamous-cell.

Melanoma incidence increases steadily with age, peaking at 35 cases per 100,000 in women aged 80 to 84 years. It then decreases slightly in women aged 85 years and older.

Figure 16. Rate of Melanoma by Age Group
Massachusetts Females, 1994-1998



STAGING

In 1998, more than 80% of melanomas were diagnosed at an *in situ* or localized stage, when the disease is most treatable. The proportion of melanomas diagnosed at a distant stage decreased between 1992 and 1998.

Table 11. Melanoma Stage at Diagnosis
Massachusetts Females, 1992, 1995 and 1998

Stage at Diagnosis:	1992	1995	1998
In situ (limited to starting point)	14.6 %	24.2 %	28.7 %
Localized (confined to organ where it began)	62.4 %	56.6 %	56.5 %
Regional (spread to some nearby areas)	4.4 %	6.8 %	7.9 %
Distant (spread into other parts of the body)	5.8 %	3.3 %	1.4 %
Unstaged (a stage can't be assigned)	12.7 %	9.2 %	5.5 %

SURVIVAL

Melanoma has the highest overall relative survival rate of the seven cancers in this report, about 92%. Relative survival for white women has increased slightly over time, presumably due to increased early detection (more cases being found earlier). Among white females, relative survival rates are higher in those under age 65 years than in those age 65 years and older. The number of cases in black women is too small to draw any definitive conclusions.

Table 12 at a glance:

- Relative survival rates are poorer for women diagnosed at later stages.
- White women seem to have better relative survival rates than black women (although the number of black women who are diagnosed with melanoma is so small that their relative survival rates may not be accurate).
- Younger women have slightly better relative survival rates than older women.

Table 12. Melanoma 5-Year Relative Survival Rates
Females, United States, 1992-1997

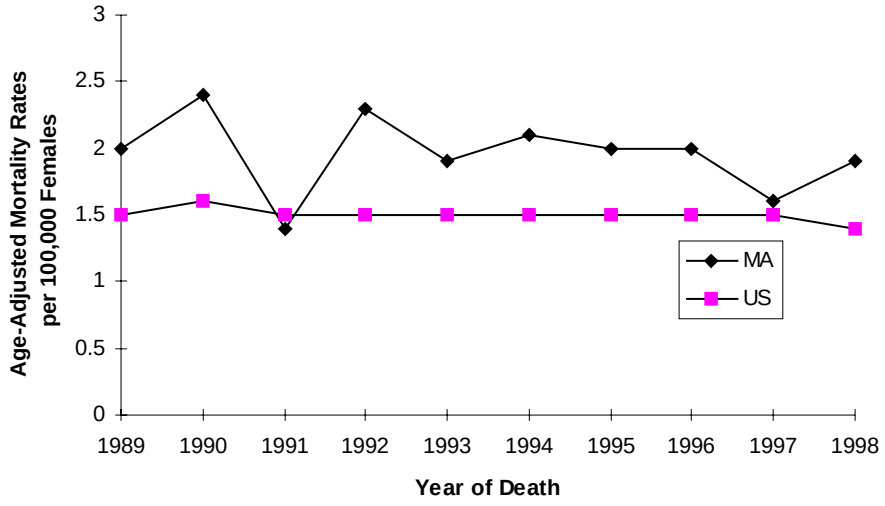
	Race:		
	All Races	White	Black
Overall:	91.5 %	91.8 %	62.9 % +
By Stage at Diagnosis:			
Localized (confined to organ where it began)	96.8 %	96.9 %	76.2 % +
Regional (spread to some nearby areas)	66.6 %	67.3 %	--
Distant (spread into other parts of the body)	13.3 %	13.7 %	--
By Age at Diagnosis:			
Under 65 years	93.6 %	93.8 %	64.5 % +
65 years and over	86.3 %	86.7 %	--

-- Survival rate could not be calculated because of small numbers.
+ These numbers may not be accurate, since the number of black women with melanoma is so small.

MORTALITY

Between 1989 and 1998, 906 women in Massachusetts died of melanoma, an average of about 100 deaths per year. In 1998, 76 women died of melanoma, for an age-adjusted mortality rate of 1.9 per 100,000. As with incidence data, the small numbers of deaths from melanoma result in year-to-year fluctuations. Over time, however, Massachusetts rates have remained fairly steady. US rates have also remained steady at about 1.5 per 100,000. For the period 1994-1998, Massachusetts had the fourth highest female melanoma mortality rate in the US, about 27% higher than the national average.

Figure 17. Female Melanoma Mortality Trends for Massachusetts, 1989-1998 and United States, 1989-1998



Melanoma Age- Adjusted Mortality Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	2.0	2.4	1.4	2.3	1.9	2.1	2.0	2.0	1.6	1.9
US	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4

OVARIAN CANCER

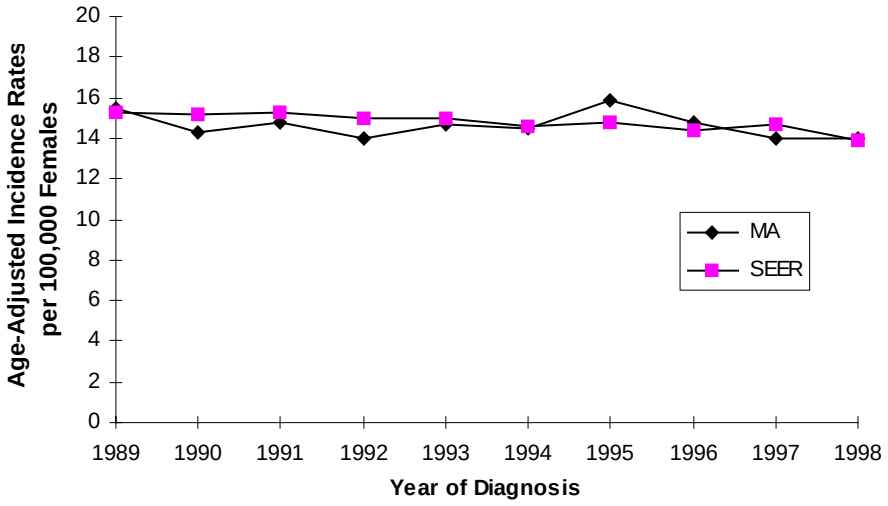
INCIDENCE

Based on national data, the average woman has approximately a 1.7% lifetime risk of developing ovarian cancer, or about a one in 59 chance. The risk for a white woman is about the same as the average (1.8%, or one in 55), while a black woman has a lower risk, one in 95.

Between 1989 and 1998, ovarian cancer was the fifth most common cancer in Massachusetts women, accounting for 5,666 incident cases (3.8% of all newly diagnosed cancers) -- more than 500 women a year. In 1998, 576 women were diagnosed with ovarian cancer, an age-adjusted incidence rate of 14.0 per 100,000.

No consistent increase or decrease in the incidence of ovarian cancer has occurred among women in Massachusetts or in the SEER areas since 1989. Massachusetts incidence rates tend to be about the same as SEER rates.

Figure 18. Ovarian Cancer Incidence Trends for Massachusetts, 1989-1998 and SEER Areas, 1989-1998

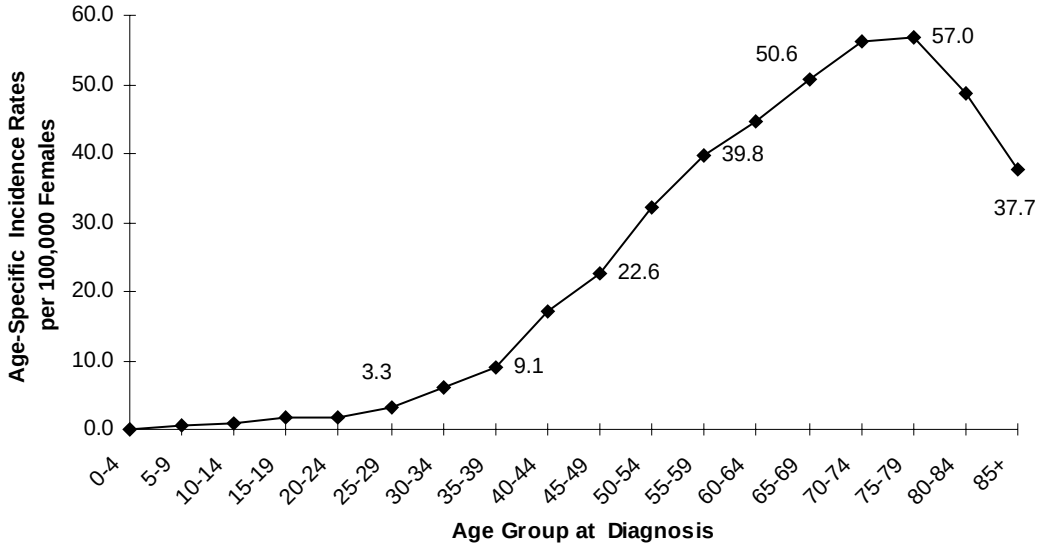


Ovarian Cancer Age-Adjusted Incidence Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	15.5	14.3	14.8	14.0	14.7	14.5	15.9	14.8	14.0	14.0
SEER	15.3	15.2	15.4	15.1	15.0	14.6	14.8	14.4	14.7	13.9

The incidence of ovarian cancer steadily increases with age, with the highest incidence among Massachusetts women aged 75-79 years (57 per 100,000), then declines in women aged 80 years and older.

Figure 19. Rate of Ovarian Cancer by Age Group
Massachusetts Females, 1994-1998



STAGING

Ovarian cancer is a particularly difficult cancer to detect at an early stage because there are few early signs or symptoms. About 30% of ovarian cancers are detected at a localized stage, when there is the best chance of successful treatment. A majority are detected only after they have spread to either nearby or distant parts of the body.

Table 13. Ovarian Cancer Stage at Diagnosis
Massachusetts Females, 1992, 1995 and 1998

Stage at Diagnosis:	1992	1995	1998
In situ (limited to starting point)	0.2 %	0.0 %	0.2 %
Localized (confined to organ where it began)	28.3 %	33.1 %	29.6 %
Regional (spread to some nearby areas)	28.4 %	24.5 %	23.9 %
Distant (spread into other parts of the body)	34.2 %	35.4 %	37.3 %
Unstaged (a stage can't be assigned)	8.9 %	7.0 %	9.0 %

SURVIVAL

Relative survival rates for ovarian cancer have increased slightly over time, to about 52%. Overall relative survival is significantly better for women younger than 65 years than for women age 65 years and older, with relative survival rates about twice as high in younger women. There is little difference in relative survival by race.

Table 14 at a glance:

- Relative survival rates are poorer for women diagnosed at later stages.
- Relative survival rates for black women and white women are about the same, except for older black women, who have the poorest survival.
- Younger women have better relative survival rates than older women.

Table 14. Ovarian Cancer 5-Year Relative Survival Rates
Females, United States, 1992-1997

	Race:		
	All Races	White	Black
Overall:	52.1 %	51.5 %	50.5 %
By Stage at Diagnosis:			
Localized (confined to organ where it began)	95.1 %	95.2 %	92.3 %
Regional (spread to some nearby areas)	80.5 %	79.6 %	78.6 % +
Distant (spread into other parts of the body)	29.4 %	29.6 %	24.1 %
By Age at Diagnosis:			
Under 65 years	64.9 %	64.9 %	63.0 % +
65 years and over	32.3 %	32.0 %	27.6 %

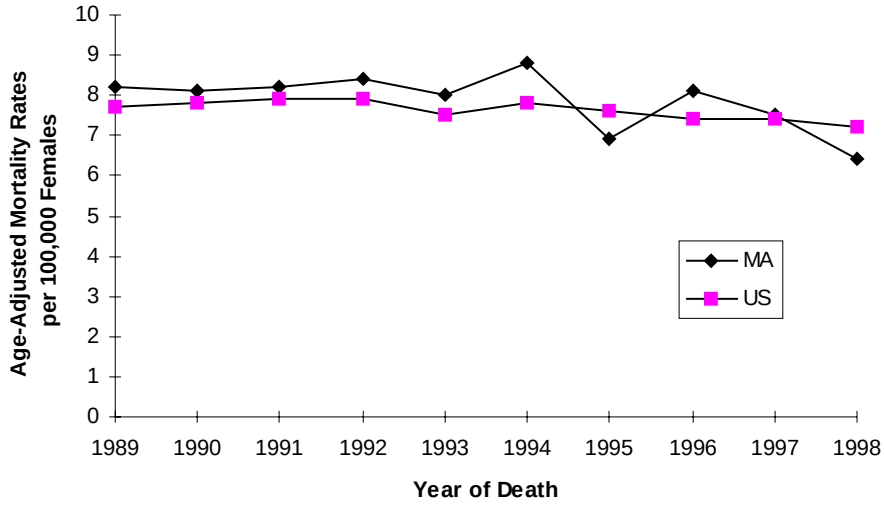
\+ These rates may not be accurate because of the small number of cases in these categories.

MORTALITY

Between 1989 and 1998, 3,369 women in Massachusetts died of ovarian cancer, an average of about 340 per year. Although ovarian cancer was the fifth most common type of cancer diagnosed, it had the fourth highest death rate**.** Until 1995, mortality rates remained fairly constant. Since that time rates have fluctuated, but appear to be declining, with a mortality rate of 6.4 per 100,000 in 1998.

Nationally, rates have declined, to 7.2 deaths per 100,000 in 1998. For the period 1994-1998, Massachusetts' ovarian cancer mortality rate was 7.5 per 100,000, the same as the US rate for that period.

Figure 20. Ovarian Cancer Mortality Trends for Massachusetts, 1989-1998 and United States, 1989-1998



Ovarian Cancer Age-Adjusted Mortality Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	8.2	8.1	8.2	8.4	8.0	8.8	6.9	8.1	7.5	6.4
US	7.7	7.8	7.9	7.9	7.5	7.8	7.6	7.4	7.4	7.2

UTERINE (ENDOMETRIAL) CANCER *

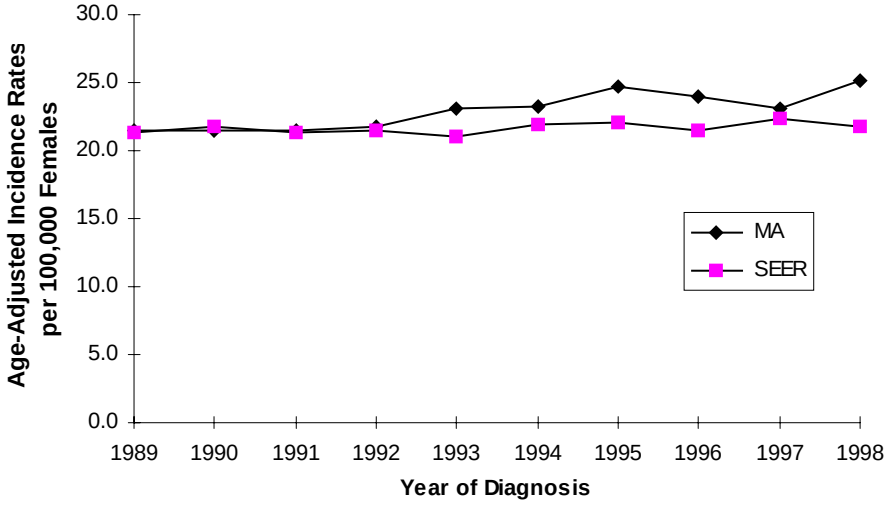
INCIDENCE

Based on national data, the average woman has approximately a 2.7% lifetime risk of developing invasive uterine cancer (about 1 in 37). The risk for a white woman is about the same as the national average (about 1 in 35, or 2.9%), while a black woman has a lower risk, about 1 in 57 (1.7%).

Among Massachusetts females between 1989 and 1998, uterine cancer was the fourth most common cancer diagnosed, accounting for 6% of all newly diagnosed cancers (8,813 new cases) -- about 900 cases a year. In 1998, 975 women were diagnosed with uterine cancer, for an age-adjusted incidence rate of 25.2 per 100,000.

Uterine cancer incidence has remained steady in the SEER areas at about 22 per 100,000 since 1989. In Massachusetts, there was an increase of 17% in incidence between 1989 and 1998. Massachusetts rates have been slightly higher than SEER rates since 1991.

Figure 21. Uterine Cancer Incidence Trends for Massachusetts, 1989-1998 and SEER Areas, 1989-1998



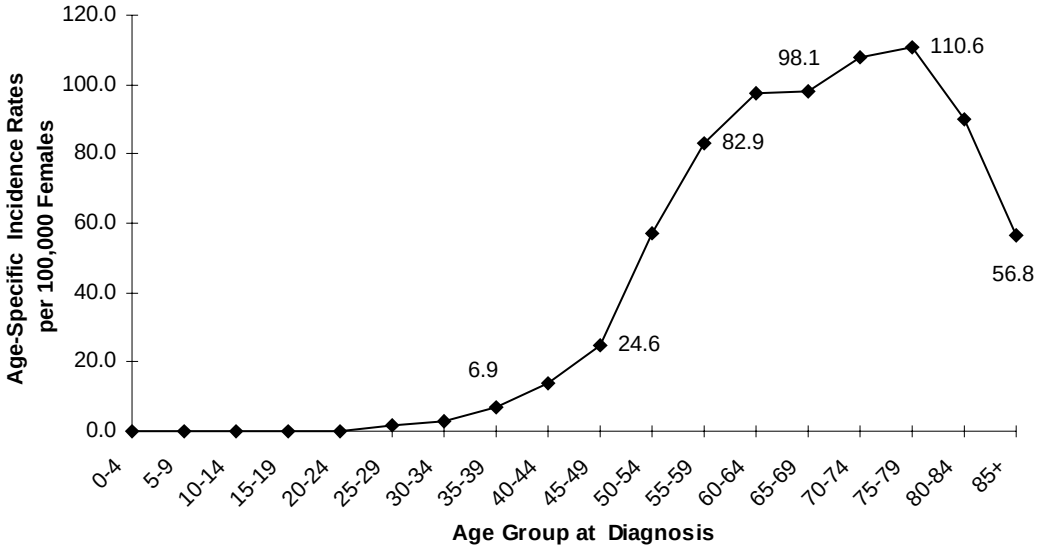
Uterine Cancer Age-Adjusted Incidence Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	21.5	21.5	21.5	21.7	23.1	23.3	24.7	23.9	23.1	25.2
SEER	21.3	21.7	21.3	21.5	21.0	21.9	22.0	21.5	22.4	21.8

* Cancer of the uterus is often called *endometrial cancer*, which is a cancer of the lining of the uterus or womb. *Note:* This section does not include uterine sarcoma.

The incidence of uterine cancer is highest in women aged 75-79 years, about 111 cases per 100,000, then decreases among women aged 80 years and older.

Figure 22. Rate of Uterine Cancer by Age Group
Massachusetts Females, 1994-1998



STAGING

Since 1992, nearly three-quarters of the cases of uterine cancer diagnosed in Massachusetts women were detected while *in situ* or localized, when most treatable. There has been little change in the distribution of stage at diagnosis between 1992 and 1998.

Table 15. Uterine Cancer Stage at Diagnosis
Massachusetts Females, 1992, 1995 and 1998

Stage at Diagnosis:	1992	1995	1998
In situ (limited to starting point)	2.2 %	2.0 %	1.6 %
Localized (confined to organ where it began)	71.1 %	73.0 %	72.9 %
Regional (spread to some nearby areas)	12.6 %	15.6 %	14.2 %
Distant (spread into other parts of the body)	5.9 %	5.0 %	6.0 %
Unstaged (a stage can't be assigned)	8.2 %	4.4 %	5.4 %

SURVIVAL

Five-year relative survival among women diagnosed with uterine cancer is about 84% overall. This rate is better for younger women than for older women. By race, white women exhibit far better relative survival rates than black women, regardless of age or stage at diagnosis. Substantial differences are seen among women aged 65 years and older, in which five-year relative survival rates for white women (82.5%) are significantly higher than those seen for black women (49.2%).

Table 16 at a glance:

- Relative survival rates are poorer for women diagnosed at later stages.
- White women have much better relative survival rates than black women.
- Younger women have better relative survival rates than older women, especially among black women.

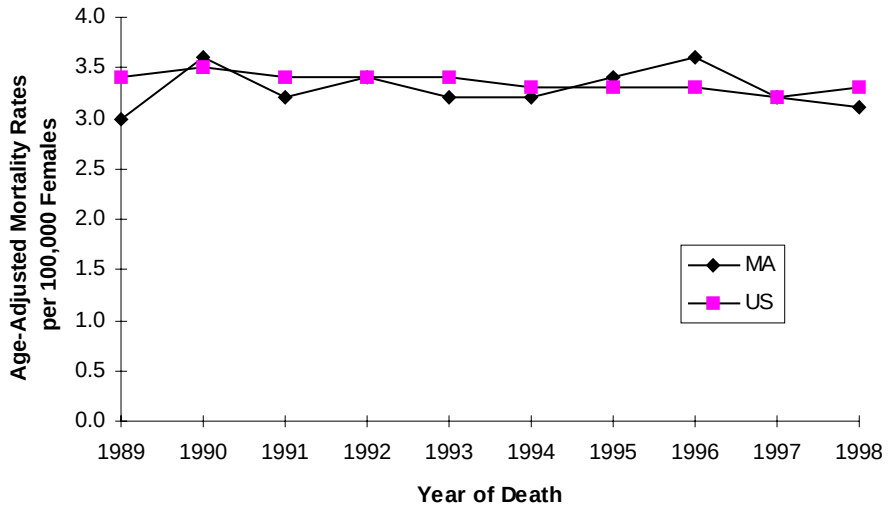
Table 16. Uterine Cancer 5-Year Relative Survival Rates Females, United States, 1992-1997

	Race:		
	All Races	White	Black
Overall:	84.0 %	85.8 %	58.9 %
By Stage at Diagnosis:			
Localized (confined to organ where it began)	96.1 %	96.9 %	82.9 %
Regional (spread to some nearby areas)	62.7 %	65.1 %	42.7 %
Distant (spread into other parts of the body)	25.8 %	27.7 %	13.1 %
By Age at Diagnosis:			
Under 65 years	88.6 %	90.5 %	67.7 %
65 years and over	79.4 %	82.5 %	49.2 %

MORTALITY

Between 1989 and 1998, 1,578 Massachusetts women died of uterine cancer, about 160 per year. In 1998, 155 women died, an age-adjusted mortality rate of 3.1 per 100,000. Rates in Massachusetts have fluctuated over time, probably due to the small number of deaths from uterine cancer. On average, the rates for Massachusetts are about the same as national rates.

Figure 23. Uterine Cancer Mortality Trends for Massachusetts, 1989-1998 and United States, 1989-1998



Uterine Cancer Age-Adjusted Mortality Rates (per 100,000 females):

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MA	3.0	3.6	3.2	3.4	3.2	3.2	3.4	3.6	3.2	3.1
US	3.4	3.5	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.3

RESOURCES

Cancer Information Hotlines and Organizations:

American Cancer Society
(includes information on local free and low-cost cancer screenings)
1-800-ACS-2345 (1-800-227-2345) -- calls answered 24 hours / 7 days a week
Bilingual Information Specialist available.

American Cancer Society – Cancer Survivors Network
(Created for and by survivors and their families to connect with others who have been touched by cancer, share experiences, and support one another)
1-877-333-HOPE (1-877-333-4673) -- available 24 hours / 7 days a week

Cancer Care Counseling Line
1-800-813-HOPE

Cancer Information Service (National Cancer Institute)
1-800-4-CANCER (1-800-422-6237)
1-800-332-8615 TTY for the hearing impaired

Massachusetts Smoker's Quitline, Massachusetts Tobacco Control Program and JSI Research and Training
1-800-TRY-TO-STOP (1-800-879-8678) in English
1-800-8-DEJALO (1-800-833-5256) in Spanish
1-800-TDD-1477 (1-800-833-1477) TTY for the hearing impaired

Massachusetts Women's Health Network Toll Free Information Line (includes information on free and low-cost breast and cervical cancer screenings)
1-877-414-4447 (This toll free number includes messages in Spanish and Portuguese, as well as English)
1-617-624-5992 TTY for the hearing impaired

Internet Websites:

Massachusetts Department of Public Health
- Homepage: **http://www.state.ma.us/dph**
- Cancer Prevention and Control Webpage: **http://www.state.ma.us/dph/cancerct/home.htm**
- Massachusetts Cancer Registry Webpage: **http://www.state.ma.us/dph/bhsre/mcr/canreg.htm**

American Cancer Society
http://www.cancer.org

Cancer Care
http://www.cancercare.org

Cancer News on the Net
http://www.cancernews.com

Centers for Disease Control and Prevention
- Homepage: **http://www.cdc.gov**
- Cancer Prevention and Control Program: **http://www.cdc.gov/cancer**

Harvard Center for Cancer Prevention
- Homepage: **http://www.hsph.harvard.edu/cancer**
- Your Cancer Risk: **http://www.yourcancerrisk.harvard.edu**

National Cancer Institute
- Public information: **http://www.cancer.gov**
- SEER data: **http://seer.cancer.gov**
- 5-A-Day Program: **http://www.5aday.gov**

National Coalition for Cancer Survivorship
http://www.canceradvocacy.org

Oncolink
http://www.oncolink.upenn.edu

Pamphlets and Booklets:

The availability of pamphlets and booklets may change over time. Please check with the appropriate contact for the most current information about publications.

BREAST AND CERVICAL CANCER:

The following publications are available through the Massachusetts Health Promotion Clearinghouse by calling 1-800-952-6637 or visiting www.maclearinghouse.com:

- **Bilingual Mammography Patient's "Bill of Rights",** Information Card (*Available in English/Spanish)*
- **Bilingual Mammography Patient's "Bill of Rights",** Poster (*Available in English/Spanish)*
- **They Say The Best Things In Life Are Free,** Poster
- **Women's Health Network Bilingual Information Card,** eligibility criteria and contact information for free health screening (*Available in English, Chinese, Haitian Creole, Khmer, Lao, Portuguese, Russian, Spanish, and Vietnamese*)
- **Women's Health Network Program Point of Purchase Display,** Stand and Tear Off Card
- **Massachusetts Breast Cancer Research Program,** Booklet

The following publications are available through the Massachusetts Department of Public Health, Women's Health Network by calling 1-877-414-4447:

- **Women's Health Network Passport Health Guide,** Booklet
- **Bilingual Women's Health Network 1-877-414-4447,** Wallet Card

COLORECTAL CANCER:

The following publications are available through the Massachusetts Department of Public Health, Cancer Prevention and Control Program by calling 617-624-5290:

- **Colorectal Cancer: A Report for Health Care Professionals,** Pamphlet
- **Colorectal Cancer Prevention,** Laminated Reference Card (*Intended for Health Care Professionals*)
- **Life Begins at Fifty. Get Tested for Colorectal Cancer,** Poster
- **Take Control. Get Tested for Colorectal Cancer,** Public Brochure (*Available in English, Chinese, French, Portuguese, Russian, and Spanish*)
- **You Can Prevent Colorectal Cancer,** Public Brochure (*Available in English, Chinese, French, Khmer, Portuguese, Russian, Spanish, Vietnamese, and as a fact sheet in Bosnian*)

NUTRITION:

The following publications are available through the Massachusetts Department of Public Health, Massachusetts 5 A Day Program by calling 617-624-5418:

- **African Americans Take the 5 A Day Challenge for Better Health,** Brochure
- **Eat 5 Fruits and Vegetables Every Day,** Brochure (*Available in English and Spanish)*
- **Energizing Tips for a Healthier Family,** Brochure
- **Time to Take Five: Eat 5 Fruits and Vegetables A Day,** Brochure
- **5 A Day Recipe Cards** (Set of 10)

The following publication is available from the American Institute for Cancer Research by calling 1-800-843-8114:

- **Diet and Health Recommendations for Cancer Prevention,** 35-page booklet that includes a section on alcohol and cancer risk

OVARIAN CANCER:

To order any of these pamphlets, send requests via mail or fax to:

National Ovarian Cancer Coalition, Inc.
500 NE Spanish River Blvd., Suite 14
Boca Raton, FL 33431-4516
Main phone #: 561-393-0005/ fax: 561-393-7275
Toll-free information line: 1-888-OVARIAN (1-888-682-7426)
Webpage: www.ovarian.org

- **Myths & Facts about Ovarian Cancer. What You Need to Know (2nd edition),** M. Steven Piver, MD, Gamal Eltabbakh, MD.
- **National Ovarian Cancer Coalition. Working to Raise Awareness About Ovarian Cancer Risks and Symptoms**
- **Ovarian Cancer…It Whispers…So Listen**
- **Patient to Patient,** A patient resource for women with ovarian cancer.
- **What Every Woman Should Know About Ovarian Cancer**

PHYSICAL ACTIVITY:

To order any of these materials, send requests via mail or fax to:

Massachusetts Health Promotion Clearinghouse
The Medical Foundation
95 Berkeley Street
Boston, MA 02116
Fax: 617-536-8012

- **Physical Activity Fact Sheets,** A series of reproducible fact sheets from the American Council on Exercise
  - **Making Time for Exercise is Easy**
  - **The Right Exercise Program for You Starts Here**
  - **Moderate Exercise Will Do You A Lot of Good**
  - **Three Things Every Exercise Program Should Have**
  - **Physical Activity Pyramid**
  - **A Walk A Day…**
  - **Kids in Motion**
  - **Exercise and Menopause**
  - **Exercise and Pregnancy**
  - **Active Seniors Enjoy Life More**

- **Play 30 Minutes Poster,** A colorful poster encouraging pre-adolescent girls to engage in physical activity at least 30 minutes each day

SKIN CANCER:

The following publications are available through the Massachusetts Department of Public Health, Skin Cancer Prevention Program. To order, send requests to:

Skin Cancer Prevention Program
Massachusetts Department of Public Health
250 Washington Street, 4th Floor
Boston, MA 02108-4619
Phone: 617-624-5441
Fax: 617-624-5075

Massachusetts Department of Public Health Materials:

- **Ban the Burn Tip Sheet – General** (*Available in English, Portuguese, and Spanish)*
- **Ban the Burn Tip Sheet – Newborns** (*Available in English, Portuguese, and Spanish)*
- **Ban the Burn Tip Sheet – Preschoolers** (*Available in English, Portuguese, and Spanish)*
- **Ban the Burn Resource Guide**

- **Ban the Burn Temporary Tattoos**
- **Keep Kids Sun Safe,** Poster
- **Have a Changing Mole?,** Poster

CDC Materials: Choose Your Cover:
- **Warning Label,** Brochure
- **Parents,** Brochure
- **Poster**

American Academy of Dermatology Materials:
- **Kids, Use Your ABC's For Safe Fun in the Sun**
- **Stop! Look for the Danger Signs**

Curriculum:
- **National Safety Council:** *The Sun Safety Activity Guide*
- **The Sun Safe Project:** *Sun Safe: A Sun Protection Curriculum for Kindergarten –4th Graders*

Camp Handbook:
- **Sun Protection Policy and Counselor Handbook** (created by Boston University)

TOBACCO:

The following tobacco education materials may be ordered from the Massachusetts Tobacco Education Clearinghouse (MTEC). For more information, contact MTEC at:

Massachusetts Tobacco Education Clearinghouse
JSI Research and Training Institute, Inc.
44 Farnsworth Street
Boston, Massachusetts 02210-1211
Telephone: 617-482-9485
Fax: 617-482-0617
E-mail: mtec@jsi.com
Internet: http://www.mteccatalogue.com

4 Packets of Reproducible Health Education Materials and Fact Sheets:

Packet #1: Easy-to-Read Materials:
- **Are You 50 or Over? Still Smoking? Thinking About Quitting?**
- **Check Your Smoking I.Q. An Important Quiz for Older Smokers**
- **How Did You Quit?** (*Available in English and Spanish*)
- **It's Time to Quit!**
- **Smoking: It's Never Too Late To Stop**
- **You Can Stop Smoking**

Packet #2: Tobacco-Free Youth:

- **Children's Future At Risk From Epidemic of Tobacco Use**
- **Key Elements of the President's Plan to Reduce Children's Use of Tobacco**
- **Coaches-You Can Influence Youth**
- **Parents, Help Keep Your Kids Tobacco-Free**
- **What You(th) Should Know About Tobacco**
- **Facts You Should Know**
- **Preventing Tobacco Use Among Young People: A Report of the Surgeon General**
- **Teens and Tobacco: Facts Not Fiction**
- **Youth and Tobacco**

Packet #3: Environmental Tobacco Smoke (Secondhand Smoke):

- **It's Time To Stop Being a Passive Victim,** CDC Fact Sheets (*Available in English and Spanish*)
- **Respiratory Health Effects of Passive Smoking,** EPA Fact Sheet
- **Environmental Tobacco Smoke and Human Health**

Packet #4: Tobacco Use:

- **Cigarettes and Other Nicotine Products** (*Available in English and Spanish)*
- **Oral Cancer Risk Factors**
- **Facts About Cigar Smoking**
- **Smokeless Tobacco or Health: An International Perspective**
- **Preventing, Stopping Use of Smokeless Tobacco**
- **Smoking Cessation and the Benefits of Quitting**
- **Spit Tobacco**
- **Tobacco Use**
- **Tobacco Use Among U.S. Racial/Ethnic Minority Groups**

Materials on Secondhand Smoke:

- **I Mind Very Much If You Smoke,** Booklet
- **Please Don't Smoke In Our Home,** Sign (*Available in English, Albanian, Bosnian, Cambodian, Chinese, Portuguese, Russian, Spanish, Vietnamese, Haitian Creole, and English on an African Kente cloth design background*)
- **Second Hand Smoke: It's No Joke,** Booklet (*Available in English and Spanish*)
- **You Can Do Something About Secondhand Smoke,** Booklet (*Available in English, Spanish, Portuguese, Chinese, and Vietnamese*)

Materials on Tobacco-Free Youth:

- **Beat the Smokeless Habit: Game Plan for Success,** Booklet
- **Chew or Snuff Is Real Bad Stuff,** Pamphlet
- **Incredible Tobacco Facts,** Pamphlet
- **I Quit! What to Do When You're Sick of Smoking, Chewing, or Dipping,** Booklet
- **Quitting Spitting,** Booklet
- **Talking Tobacco: What to Say and How to Say It,** Booklet
- **Teens and Tobacco: About Cigarettes,** Pamphlet
- **The Truth About Cigars,** Pamphlet
- **Spitting Into the Wind: The Facts About Dip and Chew,** Booklet

Materials on Smoking and Smoking Cessation:

- **Beyond Willpower: Five Tools to Help You Quit Smoking,** Pamphlet
- **Bouki and Malis: A Tale About Cigarettes,** Pamphlet (*Available in Haitian Creole Only*)
- **Can You Help the Smoker in Your Life Decide to Quit?,** Pamphlet (*Available in English and Spanish*)
- **Cigars,** Pamphlet
- **Facts About Smoking,** Series of Bilingual Cards (*Available in English/Albanian, Bosnian, Cambodian, Chinese, Portuguese, Russian, Spanish, Vietnamese, Haitian Creole*)
- **Good Things Happen to Healthy Families,** Bilingual Pamphlet (*Available in English/Chinese, Vietnamese and Cambodian*)
- **I Won't Smoke Today Because...,** Pamphlet
- **In Any Language, The Facts About Smoking Are Alarming,** Fact Sheet/Poster (*English/Chinese/Spanish/ Cambodian/ Haitian- Creole/Portuguese/Vietnamese*)
- **It's Never Too Late To Stop,** Pamphlet
- **Let's Talk About Smoking,** Booklet (*Available in Spanish and Portuguese Only*)
- **Life After Cigarettes: Quit Smoking Cards,** Pocket Size Cards (*Available in English and Spanish*)
- **Massachusetts Smoker's Quitline,** Bilingual Pamphlet (*Available in English/Spanish*)
- **Rompa Con El Vicio,** Booklet (*Available in Spanish Only*)
- **Smart Move! A Stop Smoking Guide,** Booklet
- **Smoking and Your Family,** Pamphlet (*Available in Vietnamese Only*)
- **Smoking Is Bad: It's as Bad as It Looks**, Booklet (*Available in Spanish Only*)
- **Smoking Is Bad: No Ifs, Ands or Butts,** Booklet
- **Smoking Is Not Good For Your Health,** Pamphlet (*Available in Haitian Creole only*)
- **Smoking: Facts and Quitting Tips for Black Americans**
- **Smoking: Facts and Quitting Tips for Hispanics,** Bilingual Pamphlet (*Available in English/Spanish*)
- **Smoking: Facts and Tips for Quitting,** Booklet
- **Still Smoking? Read This!,** Booklet (*Available in English and Spanish*)

- **The Little I Can Quit Book,** Booklet (*Available in English and Portuguese*)
- **Tobacco and Stress,** Pamphlet
- **Tobacco and the Family,** Pamphlet *(Available in Vietnamese Only*)
- **What Do All Of These Have In Common?,** Pamphlet for African American Audiences

Materials on Women and Tobacco:

- **Entre Nosotras/Between Us,** Bilingual Magazine (*Available in English/Spanish*)
- **Healthy Beginnings Without Cigarettes or Secondhand Smoke,** Booklet
- **Is Your Baby Smoking?,** Pamphlet (*Available in English and Spanish*)
- **Pregnant? Don't Smoke!,** Easy-to-Read Booklet (*Available in English and Spanish*)
- **Quitting Times,** Magazine
- **Smoking and Your Baby,** Pamphlet (*Available in Cambodian, Chinese, and Vietnamese*)
- **Stop Now For Your Baby,** Booklet
- **The 10 Best Reasons Not To Smoke While You Are Pregnant,** Pamphlet (*Available in Spanish Only*)
- **Thinking About Quitting? Here's Help and Hope From Women Who Did,** Booklet
- **You Smoke and You're Pregnant,** Poster (*Available in Spanish Only*)

SUGGESTED READINGS AND REFERENCES

American Cancer Society's Guide to Complementary and Alternative Cancer Methods, Foreword by David S. Rosenthal, MD; American Cancer Society, 2000

The American Cancer Society Source Book for Nurses (7th edition); Jones & Bartlett Publishers, Sudbury, MA, 1996

A Breast Cancer Journey: Your Personal Guidebook, American Cancer Society, 2001

Beyond Miracles: Living with Cancer, Stephen P. Hersh, MD; Contemporary Books, Lincolnwood, IL, 1998

Cancer Answers: Encouraging Answers to 25 Questions You Were Always Afraid to Ask, Errol C. Friedberg, MD; WH Freeman and Company, New York, NY, 1992

The Cancer Dictionary, Roberta Altman and Michael J. Sarg, MD; Facts on File Inc., New York, NY, 1992

Cancer: Increasing Your Odds for Survival, David Bognar; Hunter House Publishers, Alameda, CA, 1998

Cancer Combat: Cancer Survivors Share Their Guerrilla Tactics to Help You Win the Fight of Your Life, Dean King, Jessica King, Jonathan Pearlroth; Bantam Books, 1998

Cancer Free: The Comprehensive Cancer Prevention Program, Sidney J. Winawer, MD, Moshe Shike, MD; Simon and Schuster, New York, NY, 1995

Cancer Incidence and Mortality in Massachusetts 1994-1998, Bureau of Health Statistics, Research and Evaluation, Massachusetts Department of Public Health; Boston, MA, 2001

Cancer Incidence in Massachusetts 1994-1998: City and Town Supplement, Bureau of Health Statistics, Research and Evaluation, Massachusetts Department of Public Health; Boston, MA, 2001

Cancer Manual (9th edition), American Cancer Society, Massachusetts Division, Inc., 1996

The Chemotherapy and Radiation Therapy Survival Guide, Judith McKay, RN, OCN, Nancee Hirano, RN, MS, AOCN; New Harbinger Publications, Inc., Oakland, CA, 1998

Choices (2nd edition), Marion Morra, Eva Potts; Avon Books, New York, NY, 1994

Colon & Rectal Cancer, Lorraine Johnston; O' Reilly Associates, 2001

Colorectal Cancer: A Thorough and Compassionate Resource for Patients and their Families, Bernard Levin, MD; Villard Books, 1999

Colorectal Cancer Screening: Clinical Guidelines and Rationale (Executive Summary), American Gastroenterological Association, Bethesda, MD, February 1997

Colon Cancer & the Polyps Connection, Stephen Fisher; Fisher Books, Tucson, AZ, 1995

The Complete Cancer Survival Guide, Peter Teeley & Philip Bashe; Doubleday, 1998

Comprehensive Cancer Care: Integrating Alternative, Complementary, and Conventional Therapies, James S. Gordon, MD, Sharon Curtin; Perseus Publishing, 2000

Confronting Cancer: How to Care for Today and Tomorrow, Michael M. Sherry, MD; Insight Books, Plenum Press, New York and London, 1994

Coping with Lymphedema: A Practical Guide to Understanding, Treating, and Living with Lymphedema, Joan Swirsky, RN and Diane Sackett Nannery; Avery Publishing Group, Garden City Park, New York, 1998.

Diagnosis and Treatment of Early Melanoma (consensus statement), National Institutes of Health Consensus Development Conference, January 27-29, 1992

Dr. Folkman's War: Angiogenesis and the Struggle to Defeat Cancer, Robert Cook; Random House, 2001

Dr. Susan Love's Breast Book, Susan M. Love, MD; Perseus Publishing, September 2000

Everyone's Guide to Cancer Therapy: How Cancer is Diagnosed, Treated and Managed Day to Day, Malin Dollinger, MD, Ernest H. Rosenbaum, MD, Greg Cable; Somerville House Books Limited, Toronto, Ontario, Canada, and Andrew McMeel Publishing, Kansas City, MO, 1997

Food, Nutrition and the Prevention of Cancer: A Global Perspective, World Cancer Research Fund / American Institute for Cancer Research; Washington, DC, 1997

Harvard Report on Cancer Prevention, Volume I: Causes of Human Cancer, Cancer Causes and Control; Rapid Science Publishers, London and Philadelphia, Volume 7, Supplement 1, November 1996

Harvard Report on Cancer Prevention, Volume II: Prevention of Human Cancer, Cancer Causes and Control; Rapid Science Publishers, London and Philadelphia, Volume 8, Supplement 1, November 1997

Harvard Report on Cancer Prevention, Volume III: Prevention of colon cancer in the United States, Cancer Causes and Control; Kluwer Academic Publishers, Volume 10: 167-180, 1999

Healthy Women, Healthy Lives: A Guide to Preventing Disease, from the Landmark Nurses' Health Study, Susan Hankinson, ScD, Graham Colditz, MD, JoAnn Manson, MD, Frank Speizer, MD; Simon & Schuster, July 2001

I Can Cope: Staying Healthy with Cancer, Judi Johnson and Linda Klein; CHRONMED Publishing, Minneapolis, MN, 1994

Informed Decisions: The Complete Book of Cancer Diagnosis, Treatment and Recovery, Gerald P. Murphy, MD, Lois B. Morris, Dianne Lange; Viking, 1997

The Journal to Recovery: A Complete Guide to Cancer Chemotherapy, Margot Joan Fromer; Adams Media Corporation, Holbrook, MA, 2001

Lung Cancer: A Guide to Diagnosis and Treatment, Walter Scott, MD; Addicus Books, 2000

Non-Hodgkin's Lymphomas, Lorraine Johnston; O' Reilly and Associates, 1999

Nutrition and Cancer Special Report, Cancer Causes and Control; Rapid Science Publishers, London and Philadelphia, Volume 7, Number 1, January 1996

Nutrition, Cancer and You: What You Need to Know and Where to Start, Susan Calhoun, Jane Bradley; Addax Publishing Group, Lenexa, KS, 1997

One Renegade Cell: How Cancer Begins, Robert A. Weinberg; Basic Books, 1998

Patient Education Guide to Oncology Drugs, Gail M. Wilkes, RN, MS, AOCN, Terri B. Ades, RN, MS, AOCN, Irwin Krakoff, MD; Jones and Bartlett, 2000. Copies are available through the American Cancer Society.

SEER Cancer Statistics Review, 1973-1998, LAG Ries, MP Eisner, CL Kosary, BF Hankey, BA Miller, L Clegg, BK Edwards (eds.); National Cancer Institute, Bethesda, MD, 2001

Understanding Cancer: A Patient's Guide to Diagnosis, Prognosis, and Treatment, C. Norman Coleman, MD; The Johns Hopkins University Press, Baltimore, MD, 1998

The Wellness Community Guide to Fighting for Recovery from Cancer, Harold H. Benjamin, PhD and Susan M. Love, MD; GP Putnam's Sons, New York, NY, 1995

What To Do If You Get Colon Cancer, Paul Miskovitz, MD, Marian Betancourt; John Wiley and Sons, Inc., New York, NY, 1997

What You Need to Know About Cancer, Scientific American (special issue); W.H. Freeman and Company, New York, 1997

What You Really Need to Know about Cancer, Robert Buckman, MD; The Johns Hopkins University Press, 1995

Women & Cancer. Knowledge. Understanding. Power., Massachusetts Department of Public Health; Boston, MA, 2002

Writing Your Way Through Cancer, Chia Martin; Hohm Press, 2000

GLOSSARY

Here are some definitions which may help you understand and use the information in this report. Many of these terms apply to all sorts of diseases and health conditions, but we'll use breast cancer as an example.

Incidence rate: the number of new cases of a disease in a given size population in a given time period (for example, the number of new cases of breast cancer in a group of women in a given time period). Usually, an incidence rate is given as the number of new cases per 100,000 women per year.

For example: an annual breast cancer incidence rate of 106 per 100,000 means that for every 100,000 women there were 106 new cases of breast cancer diagnosed per year.

Mortality rate (death rate): the number of deaths from a disease in a given size population in a given time period. Like incidence rates, mortality rates are usually given as the number of deaths per 100,000 people or women per year.

For example: an annual breast cancer mortality rate of 35 per 100,000 means that for every 100,000 women there were 35 deaths from breast cancer per year.

Age-specific rates: these rates are used when we're only looking at cancers diagnosed, or deaths, in people in a particular age range in a given time period. We can use age-specific rates to look at how cancer incidence changes with age. Age-specific rates are calculated by dividing the number of people in an age group who have a particular condition by the number of people in that same age group overall. The rate is generally given as a rate per 100,000.

For example: an age-specific breast cancer rate for women aged 70-74 years of 485.7 per 100,000 means that there were 485.7 cases of breast cancer diagnosed in women aged 70-74 years for every 100,000 women aged 70-74 years in the population for a given time period (here, 1994 through 1998).

Age-adjusted rates: The risk of developing or dying from cancer often varies by age. For example, older women are more likely to develop breast cancer than younger women. This makes a difference when we're comparing cancer cases or deaths between communities or states, between Massachusetts and the United States as a whole, or over time. Age-adjustment is a way to take into account the fact that different areas have different age structures -- some communities may have a lot of

retirees, while others may be "college towns" with many students in their 20s. Without taking into account these different age structures, we can't be sure if a community has a higher number of cancer cases due to some factor(s) in that community, or just because there are more older women living there.

In this report, we don't compare cancer rates between different communities, but we do compare rates between Massachusetts and the national SEER program (the best estimate of US rates). It's important to use age-adjusted rates, so that we take into account differences between the age structure of Massachusetts and the US.

Age-adjusted rates are calculated by weighting the age-specific rates for a given year by the age distribution of a standard population. The weighted age-specific rates are then added to produce the adjusted rate for all ages combined. The 1970 U.S. population is used as the standard in this document for both incidence and mortality for consistency with data published by SEER.

Rates can only be compared if they have been adjusted to the same standard. Age-adjusted cancer incidence and mortality rates presented in this report may differ from those in other reports which use a different standard such as the 1940 or 2000 U.S. population.

For example: the Massachusetts 1998 age-adjusted female breast cancer incidence rate was 128.3 per 100,000, which means that there were 128.3 cases of breast cancer diagnosed for each 100,000 women in Massachusetts. The SEER 1998 age-adjusted breast cancer incidence rate was 118.1 per 100,000, which means that there were 118.1 cases of breast cancer diagnosed for each 100,000 women in the SEER areas. Because these are both age-adjusted rates, we can directly compare them and determine that the incidence of breast cancer was higher in Massachusetts than in the SEER areas in 1998.

Survival and **Relative Survival:** Survival is the percentage of people diagnosed with a disease who are still alive a certain time later. The figure most often given is for 5-year survival, which means the proportion of people who are still alive five years after diagnosis. This figure includes all people still alive, regardless of their health -- some will have no sign of disease, while others may suffer from severe disease or disease which has spread (metastasized). Relative survival is a survival rate that has been adjusted for expected mortality in the general population. Relative survival describes the percentage of people that have not died from a *particular* disease within a certain time period.

For example: a 5-year breast cancer relative survival rate of 80% means that 80% of women diagnosed with breast cancer have not died from their breast cancer five years later.

Risk or **Lifetime Risk:** the likelihood that a woman will develop cancer sometime in her life. This is a figure which is easy to misinterpret. For example, you may have heard that your risk of developing breast cancer is 1 in 8. This makes your likelihood of developing breast cancer sound much higher than it actually is. The "1 in 8" figure actually refers to women aged 85 years and older -- a woman who has reached the age of 85 years or older has had a 1 in 8 chance of being diagnosed with breast cancer at some point during her life.

The risk of developing most cancers varies with age, and may also vary by race. The likelihood of developing cancer also varies with other risk factors a woman may have, such as a family history of that cancer, medical history or lifestyle.

Note: risks may also be given as percentages. For example, a 1 in 8 risk is the same as a 12.5% risk -- 1 divided by 8.